Handbook of Infant Mental Health

Second Edition

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The Guilford Press
NEW YORK LONDON

A Division of Guilford Publications, Inc.
72 Spring Street, New York, NY 10012
http://www.guilford.com

Printed in the United States of America

This book is printed on acid-free paper.

Last digit is print number: 9 8 7 6 5 4 3 2 1

Library of Congress Cataloging-in-Publication Data

Handbook of infant mental health / Charles H. Zeanah, Jr., editor. — 2nd ed.
p. ; cm.
Includes bibliographical references and indexes.
ISBN 1-57230-515-0 (hardcover : alk. paper)
1. Infant psychiatry—Handbooks, manuals, etc. 2. Infants—Mental health—Handbooks, manuals, etc. I. Zeanah, Charles H.
[DNLM: 1. Mental Health—Infant. 2. Developmental Disabilities. 3. Mental Disorders—Infant. WS 350.6 H2375 2000]
RJ502.5.H36 2000
618.92'89—dc21

99-051343

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Exposure to Violence and Early Childhood Trauma

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The first 3 years of life include significant trauma for an increasing number of children in this country. This chapter reviews estimates of the number of infants and toddlers who are victims of and witness to child abuse, spousal abuse, and community violence. The impact of early exposure to these various forms of trauma is discussed in relation to social and emotional development, the emergence of trauma specific diagnoses, alterations in biological stress systems and brain development, and later offending behavior. Mediating factors associated with variability in child outcome are also delineated, and treatment implications are briefly discussed.

It has been hypothesized that trauma that occurs during the first 3 years of life will have particularly pernicious effects, given the rapid changes that occur in brain architecture during this developmental period (Perry, Pollard, Blakey, Baker, & Vigilante, 1995). The data reviewed in this chapter provide preliminary support for this hypothesis. They also highlight considerable heterogeneity in the outcome of traumatized children. Numerous intrinsic and extrinsic risk and protective factors mediate children's response to trauma, and careful consideration of these and other developmental factors is essential to devise effective interventions for traumatized youth.

RATES OF TRAUMA EXPOSURE IN YOUNG CHILDREN

Among industrialized nations, the United States ranks last in protecting its children from violence (Children's Defense Fund, 1998). Infants and toddlers are frequent victims of—and witness to—child abuse, spousal abuse, and community violence. Moreover, children who experience any one of these forms of trauma are at increased risk of experiencing the other forms of trauma as well. As numerous studies have documented official and survey reports to underestimate the true rates of trauma experiences (Straus & Gelles, 1990), the statistics estimating rates of exposure in young children should be interpreted with caution.

In 1995 there were approximately 1 million substantiated reports of child maltreatment and 1,000 child fatalities due to abuse or neglect (U.S. Department of Health and Human Services, 1997). Children age 3 and younger comprised 26% of all indicated child maltreatment reports: 20% of physical abuse, 54% of medical neglect, 12% of sexual abuse, and 18% of all abandonment reports. In addition, children age 3 and under comprised the majority of all child fatalities. Seventy-seven percent of all reported child fatalities occurred to children in this age group. Consistent with this finding, nonacci-

dental injury is the leading cause of death for children this age (Carnegie Corporation of New York, 1994).

With regard to spousal abuse, surveys estimate that 3 million couples a year engage in severe violence, including kicking, punching, and stabbing one's partner (Straus & Gelles, 1990). Very young children are disproportionately present in homes with spousal abuse, with approximately 50% of the domestic violence cases that necessitate police involvement occurring in households with a child less than 5 years of age (Fantuzzo, Boruch, Beriama, Atkins, & Marcus, 1997). Among children who witness domestic violence, it is estimated that 37–63% are also victims of child abuse and/or neglect (Aron & Olsen, 1997).

As for figures on community violence, in 1995 more than 5,000 children died as a result of community related violence (Children's Defense Fund, 1998). Of children 1 to 5 years of age, it is estimated that 10% witnessed a shooting or stabbing, and 47% heard gunshots at some point in their lives (Taylor, Zuckerman, Harik, & Groves, 1994). However, rates of violence exposure in very young children have been derived only from maternal reports. In one study of 6- and 7-year-olds which collected trauma exposure data from both mothers and children, the child interview data generated estimates of violence exposure that were approximately four times greater than the estimates obtained from the mother interview data (Richters & Martinez, 1993). The epidemic of domestic and community violence affects not only children but their caregivers and the caregivers' capacity to nurture (Zeanah & Scheeringa, 1997). Growing evidence suggests that children's distress responses are strongly tied to caregivers' experiences, and parent and child distress following shared traumatic experiences are positively correlated (e.g., Pynoos, Steinberg, & Goenjian, 1996). As discussed later, this correlation is likely mediated by both intrinsic (e.g., inherent vulnerability to psychopathology) and extrinsic (e.g., social support) factors.

EFFECTS OF TRAUMA EXPOSURE

This section on the effects of trauma exposure in young children is divided into four parts. The first part examines core deficits that have been identified in trauma victims across the life cycle. The second part reviews trauma specific diagnoses assessed in early childhood. The third section reviews psychobiological sequelae of early trauma, and the last section discusses sexual acting out and sexual offending behavior in children abused during the first 3 years of life.

The majority of research on the effects of trauma during infancy and toddlerhood has been conducted in samples of maltreated children. Little empirical work exists documenting the effects of witnessing domestic and community violence on very young children. When younger children were included in empirical studies, the age range of subject participants tended to be quite broad. Studies conducted with school-age children suggest that a similar spectrum of difficulties are associated with child abuse, domestic violence, and community violence. In addition, the negative sequelae associated with domestic and community violence appear to be greatest in children who also experienced intrafamilial abuse (Hughes, Parkison, & Bargo, 1989; Martinez & Richters, 1993).

Core Deficits

Certain core deficits have been observed in trauma victims across the life cycle (Briere, Berliner, Bulkley, Jenny, & Reid, 1996; Cicchetti & Toth, 1995; Green, 1981). These include problems with (1) interpersonal relationships; (2) affect regulation; and (3) self-development. Whereas problems in these domains have been reported across the life cycle, their manifestations vary at different developmental levels. In addition, not all traumatized individuals experience difficulties in each of these areas. In one study that examined difficulties in maltreated children across three different domains of functioning (Kaufman, Cooke, Arny, Jones, & Pittinsky, 1994), 45% of the sample had problems in all three areas, 37% had difficulties in two areas, 13% only had problems in one area, and 5% of the sample were functioning competently in all domains assessed. As discussed later, there is considerable heterogeneity in adaptation and areas of problematic functioning within samples of trauma victims.

Interpersonal Relationships

In terms of the effects of trauma on interpersonal relationships, studies conducted with maltreated infants and toddlers report problems in relationships with primary caregivers and

with peers. Numerous studies have documented that maltreated infants and toddlers are significantly more likely than controls to have insecure attachment relationships with their primary caregivers (Crittenden, 1981, 1992; Schneider-Rosen, Braunwald, Carlson, & Cicchetti, 1985). A number of investigators also observed that many maltreated children could not be classified using the traditional Strange Situation (Ainsworth, Blehar, Waters, & Wall, 1978) scoring procedures leading to Main and Solomon's (1990) description of the disorganized/disoriented (Type D) attachment classification. Children with disorganized/disoriented attachments lack an organized strategy for seeking proximity to caregivers following brief separations (Cicchetti & Toth, 1995). A child with a disorganized attachment to his mother may exhibit such bizarre behaviors as freezing or stereotypical rocking or may display such contradictory actions as running to the doorway when his mother calls his name, then screaming and pulling away from her after she reenters the room. In one study of 12-month-old maltreated infants (Carlson, Cicchetti, Barnett, & Braunwald, 1989), 81% were classified disorganized, compared to only 19% of the comparison children. In another study of 36-month-old maltreated children (Cicchetti & Barnett, 1991), only 28% were classified disorganized, suggesting that the proportion of disorganized attachment classifications may decrease significantly with age.

Problems in peer relationships have also been reported in several studies of young traumatized children. Maltreated toddlers tend to be more aggressive with their siblings than are controls (Crittenden, 1992) and to display more withdrawal and more aggressive behaviors when interacting with peers in a day-care setting (George & Main, 1979). They have also been found to have quite disturbing responses to witnessing a peer's distress (Main & George, 1985). Under these circumstances, when compared to controls, maltreated toddlers are less likely to show sadness or concern (0% vs. 56%) and more likely to become distressed (89% vs. 11%) and to threaten and/or assault the other child (33% vs. 0%). This behavior can be quite extreme, as illustrated below.

> [In response to a peer's distress,] an abused boy of 32 months tried to take the hand of the crying other child, and when she resisted, he slapped her on the arm with his open hand. He then turned away from her to look at the ground and began vocalizing very strongly, "Cut it out! CUT IT OUT!," each time saying it a little faster and louder. He patted her, but when she became disturbed by his patting, he retreated, hissing at her and baring his teeth. He then began patting her on the back again, his patting became beating, and he continued beating her despite her screams. (Main & George, 1985, p. 410)

Affect Regulation

In addition to underscoring problems in peer relationships, the previous anecdote highlights the difficulties in affect regulation which are frequently reported in traumatized youth (Egeland & Sroufe, 1981; Fraiberg, 1982; Gaensbauer, 1982; Schneider-Rosen & Cicchetti, 1984, 1991). Overall, the affective responses of maltreated infants and toddlers tend to be less flexible, less responsive to environmental events, and skewed toward negative emotions (Gaensbauer, 1982). For example, maltreated toddlers have been found to display less pleasure and interest during free-play situations and less distress than controls when approached by a stranger or during maternal separation. This apparent emotional blunting, however, frequently gives way to extreme negative states, including tantrums in which the child throws himself on the floor and flails about until his or her screams become inconsolable sobs (Fraiberg, 1982). Significant negative states, including expressions of both sadness and anger, have been reported in maltreated toddlers during a range of experimental paradigms including free-play situations, problem-solving tasks, and mirror self-recognition testing (Egeland & Sroufe, 1981; Schneider-Rosen & Cicchetti, 1984; 1991). These early problems in affect regulation observed in clinical and experimental situations may represent beginning manifestations of later diagnosed mood and behavioral disorders.

Self-Development

Like deficits in interpersonal relationships and affect regulation, problems in self-development manifest early. Maltreated toddlers have been found to have problems in the development of self-understanding, self-esteem, and self-efficacy. For example, maltreated toddlers have been found to talk about themselves and their internal states less frequently than do controls,

despite similarities in overall language development (Beeghly & Cicchetti, 1994; Gersten, Coster, Schneider-Rosen, Carlson, & Cicchetti, 1986). In addition, maltreated toddlers are significantly more likely than controls to display a neutral or negative response (e.g., frown or furrowed eyebrows) when observing themselves in the mirror (Schneider-Rosen & Cicchetti, 1984; 1991). They also show less self-efficacy (e.g., persistence) than do controls when confronted with a problem-solving situation, despite comparability in intellectual development (Egeland & Sroufe, 1981; Gaensbauer, 1982).

These disturbances in interpersonal relationships, affect regulation, and self-development represent core symptoms of disorders frequently diagnosed in older traumatized children (e.g., conduct, depression, and dissociation disorders). Early disturbances in these domains have proven to have predictive validity in the prospective longitudinal studies of Sroufe and colleagues who completed psychiatric interviews on 168 older adolescents followed prospectively from their mother's third trimester of pregnancy (Ogawa, Sroufe, Weinfeld, Carlson, & Egeland, 1997; Renken, Egeland, Marvinney, Mangelsdorf, & Sroufe, 1989; Warren, Huston, Egeland, & Sroufe, 1997). Attachment assessments were completed at 12 months of age, and a number of other assessments of affect regulation and self-development were completed at various intervals. The children were considered at risk for poor developmental outcomes at birth due to poverty, and a subset of the children were later found to have experienced significant abuse. Age of onset, chronicity, and severity of abuse were highly correlated with later assessments of psychopathology, as were both the avoidant and disorganized patterns of attachment.

The work of Sroufe and colleagues highlights the need for comprehensive interventions for young traumatized children, as few of those who grew up in chronically abusive and neglectful environments were emotionally healthy at follow-up (Farber & Egeland, 1987). One of the first steps toward this goal is the proper identification and assessment of children at risk. One component of the assessment of the treatment needs of traumatized infants and toddlers is psychiatric diagnoses. In the next section, we briefly discuss the diagnoses most relevant to children this age. Later in the chapter we delineate additional child and family treatment foci, as interventions with traumatized infants and toddlers require comprehensive multidisciplinary approaches.

Trauma Specific Diagnoses

The two most relevant psychiatric diagnoses used with traumatized infants and toddlers are reactive attachment disorder (RAD) and posttraumatic stress disorder (PTSD). The fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV; American Psychiatric Association, 1994), is primarily symptom focused, atheoretical, and nonetiologically based. The criteria for RAD and PTSD diverge from this tradition, and include particular experiences presumed to be of etiologic significance in the criteria for the diagnoses. Specifically, a history of pathogenic care is required for the diagnosis RAD, and exposure to a traumatic event is necessary for the diagnosis PTSD. Although the data base supporting the validity of these diagnoses in very young children is extremely limited, both diagnoses are briefly discussed given their clinical relevance.

Reactive Attachment Disorder

According to DSM-IV diagnostic criteria, RAD is characterized by a prominent disturbance in social relatedness evident early in life and in association with a history of pathogenic care (for further discussion see Scheeringa & Gaensbauer, Chapter 23, this volume). This disturbance can be predominantly "inhibited," marked by an inability to attach positively to primary caregivers, or "disinhibited," marked by a history of indiscriminate sociability with caregivers and others, including strangers. In addition to the inhibited and disinhibited subtypes of RAD included in the DSM-IV (American Psychiatric Association, 1994), Zeanah, Boris, Bakshi, & Lieberman, (in press) developed criteria for additional attachment disorder subtypes: self-endangering, inhibited, vigilant/hypercompliant, and role reversed, as well as disrupted attachment disorder.

Although the diagnosis RAD is not synonymous with the insecure attachment classifications generated using the Strange Situation experimental paradigm (Zeanah, Mammen, & Lieberman, 1993), no data are available to estimate the proportion of children with insecure attachments (e.g., A, C, or D classification) who meet diagnostic criteria for RAD. RAD differs from the insecure attachment classifica-

tions in that the diagnosis is believed to describe something that resides within the child and generalizes across social situations. In contrast, the insecure attachment classifications are believed to describe the quality of a specific dyadic relationship. In very young children this distinction may be moot, however, as in the first 3 years of life disturbances in attachment are most often relationship specific (Zeanah et al., 1993).

RAD describes a pattern of disturbances not encompassed by other existing diagnostic categories in the DSM-IV (Richters & Volkmar, 1994). In addition, RAD helps define and highlight an important foci for intervention when working with traumatized children. As delineated further in the section on "Interventions," the relationship-focused work, however, is best accomplished when integrated into a comprehensive, multifaceted treatment effort (Larrieu & Zeanah, 1998).

Posttraumatic Stress Disorder

It is only within the past few years that the diagnosis PTSD has been used with infants and toddlers (for further discussion see Luby, Chapter 24, this volume). In a recent study (Scheeringa, Zeanah, Drell, & Larrieu, 1995), the reliability and validity of the DSM-IV and an alternate set of criteria for PTSD were examined in a cohort of infants and young children less than 4 years of age. The criteria for PTSD in both systems comprise three core types of symptoms: reexperiencing, avoidance or numbing, and increased arousal. DSM-IV items that require reports of subjective experience were eliminated from the alternate criteria, and all remaining items were behaviorally anchored. In addition, a category of symptoms describing new onset of fears and aggression following exposure to the traumatic event was incorporated into the alternate PTSD criteria for very young children. When both the DSM-IV and the alternate criteria were applied to 12 children less than 4 years of age, none of the 12 children met DSM-IV criteria for PTSD (Scheeringa et al., 1995). In contrast, 9 of the 12 children met the alternate criteria. In addition, the interrater reliability for the assignment of diagnoses and the rating of individual symptom clusters was excellent with the alternate criteria but not with the DSM-IV criteria.

There is a growing literature on PTSD in children, and an increasing awareness of the importance of understanding not just the effects of trauma on the development of PTSD but also the impact of PTSD on overall development (Pynoos, Steinberg, & Wraith, 1995). Further study of the onset and course of PTSD symptomatology in very young children is clearly warranted. The development of these alternate criteria will greatly help to promote the completion of systematic studies of PTSD symptomatology in traumatized infants and toddlers. Such criteria will also help to facilitate psychobiological studies of well-characterized clinical samples of very young children.

Psychobiological Sequelae

Studies conducted with children, adolescents, and young adults suggest that experiences of significant trauma during childhood are associated with long-term changes in the biological stress systems and alterations in brain development (DeBellis et al., 1999a, 1999b; Kaufman, Birmaher, Perel, 1997; Perry, Pollard, et al., 1995). Preliminary studies of very young children likewise suggest that early trauma may promote long-term changes in resting levels of stress (e.g., cortisol) hormones (Gunnar, 1998). As there has been little work on the psychobiological sequelae of trauma in very young children, the remainder of this section discusses research with older children.

Overall, the emerging data examining the psychobiological sequelae of trauma in children have been contradictory (Kaufman, 1996). Investigators have reported both increases and decreases in urinary catecholamine secretion (DeBellis et al., 1999b; Rogeness, 1991), heart rate in response to a stressor (Perry, Vigilinte, et al., 1995), corticotropin secretion in response to exogenous corticotropin releasing hormone (DeBellis et al., 1994; Kaufman et al., 1993; Kaufman, Birmaher, Perel, et al., 1997), and basal cortisol secretion (DeBellis et al., 1999b; Goenjian et al., 1996). In addition, hippocampal brain volume reductions have not been consistently reported across investigations (DeBellis et al., 1999a).

Preliminary evidence suggests that some of the heterogeneity in the psychobiological sequelae of trauma is related to inherent vulnerability factors. For example, in one study that administered the serotonin precursor L-5-hydroxytryptophan (L-5-HTP) to a cohort of depressed abused, depressed nonabused, and normal control elementary school-age children

(Kaufman et al., 1998), the importance of family history of psychopathology was demonstrated in explaining variance in neuroendocrine responses. Consistent with prior human (Pine et al., 1997) and nonhuman (Rosenblum et al., 1994) primate studies showing serotonergic system alterations in association with early adverse rearing conditions, the depressed abused children secreted significantly more prolactin post-L-5-HTP than did the depressed nonabused and normal control children. In addition to the association between abuse experiences and prolactin response to L-5-HTP challenge, however, family history of suicide attempt in first- and second-degree relatives was also significantly correlated with subjects' responses to the neuroendocrine challenge.

Variability in psychobiological correlates of trauma appear related to differences in clinical picture, which are likely also mediated by inherent vulnerability factors. For example, the investigation that reported significantly increased urinary catecholamines studied traumatized elementary school-age children with PTSD (DeBellis et al., 1999b). The investigation that reported reduced urinary catecholamines in traumatized children was conducted with boys who met criteria for conduct disorder (Rogeness, 1991). Just as evidence suggests that neurobiological alterations associated with a history of trauma are related to family history of psychopathology, there are likewise data that suggest that the type of symptomatology traumatized children manifest is related to family predisposition factors. For example, the first-degree relatives of depressed abused children are nine times more likely to have a lifetime history of major depression than are the first-degree relatives of normal control children (Kaufman et al., 1998).

Data also suggest that heterogeneity in the psychobiological correlates of trauma is related to current psychosocial stressors and availability of social supports. For example, in one study (Kaufman, Birmaher, Perel, et al., 1997), although depressed abused children had significantly greater corticotropin secretion post-corticotropin releasing hormone than did controls, the increased corticotropin secretion was *only* observed in depressed abused children experiencing ongoing chronic adversity (marital violence, emotional abuse, poverty, lack of supports). The corticotropin secretion of depressed abused children living in stable home environments was comparable to that of the nonabused children. These results are consistent with the findings of another study that reported greater dysregulation in cortisol diurnal secretion patterns in maltreated children with fewer available supports and a history of more out-of-home foster placements, than maltreated children living in more stable and supportive families (Kaufman, 1991).

Developmental factors also appear important in mediating the psychobiological sequelae of early trauma. For example, when compared to children abused later in life and normal controls, children physically abused during the first 3 years of life have been found to have reduced catecholamine function as measured by dopamine beta hydroxylase activity (Galvin, Stilwell, Shekhar, Kopta, & Goldfarb, 1997). Lower enzyme activity was also associated with greater deficits in conscience development. In another study (DeBellis et al., 1999a), earlier onset abuse was associated with greater reduction in total brain volume and region 4 of the corpus callosum. In addition, greater reductions in corpus callosum volume were associated with more severe avoidant and hyperarousal PTSD symptoms, and higher scores on the Child Dissociation Checklist. As preclinical studies suggest that some of the stress system and brain development changes associated with early stress can be reversed with psychopharmacological interventions (P. M. Plotsky, personal communication, February, 1999), longitudinal clinical and psychobiological follow-up of traumatized children is clearly warranted.

More research is needed, however, to understand how inherent vulnerability and developmental factors interact with experiences of abuse and other psychosocial stressors to produce psychopathology in traumatized children. Better understanding of the interactions among these factors and psychobiological parameters will (1) enhance understandings of the neurobiological mechanisms that mediate the development of specific symptomatology and (2) promote the development of more effective multimodal interventions for traumatized children.

Sexual Acting Out and Sexual Offending Behavior

Most negative sequelae of trauma are nonspecific and found in association with a wide array of traumatic experiences. The development of sexual acting out and sexual offending behav-

ior, however, is a relatively specific consequence of sexual abuse (Green, 1993). Moreover, emerging data suggest that these types of problems are most prevalent in children sexually abused during the first 3 years of life.

The topic of sexual abuse is not typically covered in chapters on the effects of early trauma, but children less than 7 years old comprise approximately 40% of all substantiated reports of child sexual abuse. In 1995, there were an estimated 15,128 substantiated cases of sexual abuse involving children less than 3 years old, and an estimated 36,559 substantiated cases of sexual abuse involving children 4 to 7 years old, with many of these children having experienced abuse from early in life (U.S. Department of Health and Human Services, 1997). Moreover, given the limited verbal capabilities of very young children, the sexual abuse of children less than age 3 is frequently quite severe, requiring positive medical findings to corroborate allegations.

McClellan et al. (1996) provide the most extensive data available examining the relationship between early child sexual abuse and the emergence of sexual acting-out behaviors. They reviewed 499 child and adolescent psychiatric inpatients' medical records and found that 55% had a history of child sexual abuse and 41% had a history of sexual-acting-out behaviors. Children who were sexually abused during the first 3 years of life (n = 78) were significantly more likely than children not abused and children abused later in life to have sexual acting-out problems. Eighty percent of the children sexually abused during the first few years of life had one or more types of sexual acting-out problems: 71% had problems with hypersexuality; 37% had a history of exposing their genitals, and 37% had victimized others. In contrast, rates of sexual-acting-out problems were significantly lower in children sexually abused between the ages of 7 and 12 (n = 71). Overall, 44% of these children had sexual acting-out problems: 32% had problems with hypersexuality, 10% had a history of exposing their genitals, and only 10% had victimized others. The rate of sexual behavior problems in the psychiatrically hospitalized children without a documented history of sexual abuse (n = 226) was 16%—a rate 80% lower than the rate reported in the children who were sexually abused during the first 3 years of life.

Children with the earliest sexual abuse experiences were at heightened risk for adverse outcomes due to other abuse-related factors (McClellan et al., 1996). When compared to the other sexually abused children, they had higher rates of physical abuse and neglect. In addition, their sexual abuse experiences were more likely to have been chronic and to have involved multiple perpetrators, one of whom was a parent or stepparent.

It is important to remember, of course, that psychiatrically hospitalized youth are not representative of all sexually abused children. In addition, although sexually abused children may be at increased risk of developing sexual acting-out behaviors, most sexually abused children do not engage in sexualized behavior (Friedrich, 1993).

While there are likely multiple possible mechanisms by which these very early sexual abuse experiences may lead to the development of persistent sexual acting-out behavior problems, there are some interesting psychobiological hypotheses worth brief discussion. Gonadotropin-releasing hormone inhibitor is one medication that is currently prescribed to adult sexual offenders (Rosler & Witztum, 1998). Interestingly, the first few years of life mark a period when gonadotropin-releasing hormone is normally secreted at very high levels. Gonadotropin-releasing hormone levels then fall quite dramatically and remain low until puberty (Neely et al., 1995). In addition, hormones (e.g., corticotropin-releasing hormone) and neurotransmitters (e.g., noradrenaline) released in response to stress increase gonadotropin-releasing hormone secretion (Herbison, 1997; Rivest & Rivier, 1995). Due to the normative elevations of gonadotropin-releasing hormone early in life, stressful sexual abuse experiences may be particularly pernicious during the first 3 years.

Sexual acting-out behaviors are frequently treatment resistant, although preliminary data does suggest they can be effectively targeted with cognitive behavioral interventions in preschool children (Cohen & Mannarino, 1996). In our specialty clinic for abused children and their families (Kaufman, Birmaher, Clayton, & Retano, 1997), we were referred several early school-age boys with a history of sexual abuse during the first 3 years of life. Their problems with persistent sexual acting-out behaviors were so severe they could not be left unsupervised with siblings or peers. As the majority of these children had comorbid attention-deficit/hyperactivity disorder, methyl-

phenidate was prescribed as part of a multimodal intervention. The combined methylphenidate and psychotherapeutic interventions had a positive effect on the sexual acting-out behavior symptoms in many of the children undergoing open trial treatments. Methylphenidate increases dopamine secretion (Greenhill, 1992), and dopamine decreases gonadotropin-releasing hormone secretion (Levavi-Sivan, Ofir, & Yaron, 1995), suggesting the need for more research to understand the gonadotropin system and its possible role in the development and maintenance of sexual acting-out behavior in children abused early in life. As discussed in the following section, many factors mediate the developmental trajectory of traumatized children. Better understanding of these factors will facilitate the development of more efficacious multimodal treatments.

MEDIATING FACTORS

Throughout the section on the impact of early trauma, we highlighted multiple factors that mediate children's outcomes. These factors interact in complex ways over time (Pynoos et al., 1995). Still, more research is needed to understand how inherent vulnerability and developmental factors interact with trauma and other psychosocial risk factors to produce variability in the developmental outcomes of traumatized children.

No one clinical profile characterizes traumatized children, and child outcomes are not static. They tend to change in predictable ways in response to alterations in different mediating factors (Farber & Egeland, 1987). In addition, not all traumatized children develop difficulties (Briere et al., 1996). In one review of the sequelae of child sexual abuse it was estimated that 40% of abused children were functioning well, with no significant trauma-related problems (Kendall-Tackett, Williams, & Finkelhor, 1993).

This section reviews child, family, social, and trauma-related factors that affect the outcome of traumatized children. For example, responses to trauma are influenced by children's age at the time of the event, temperament, history of preexisting psychopathology, IQ, coping styles, and cognitive appraisal of traumatic experiences (Briere et al., 1996; Kaufman & Mannarino, 1995; Okun, Parker, & Levendosky, 1994; Pynoos et al., 1996). They are also influenced by numerous family factors including parental psychopathology, parental substance abuse, quality of spousal and parent–child relationship, family cohesion, and support received following the trauma (Cicchetti & Toth, 1995; Pynoos et al., 1995). The overall social context of development also influences child outcomes, with traumatic responses being affected by poverty status, community resources, psychotherapeutic interventions, and availability of extended social supports (Erikson & Egeland, 1996; Okun et al., 1994; Kaufman & Zigler, 1989). In addition, numerous trauma-related factors influence child outcome. These include level of traumatic exposure, number of traumatic stressors, duration of traumatic experiences, closeness of relationship with perpetrator, system responses (e.g., child protective services), the need to testify in court following a trauma, exposure to traumatic reminders, secondary adversities, and losses in association with trauma (Briere et al., 1996; Goodman et al., 1992; Kendall-Tackett et al., 1993; Pynoos et al., 1995; 1996).

Of the different mediating factors that have been identified, the availability of a supportive parent or alternate guardian has been demonstrated to be one of the most important factors that distinguishes traumatized children with good developmental outcomes from those with more deleterious outcomes (Pynoos et al., 1995). The importance of a positive support has been demonstrated in studies examining the intergenerational transmission of abuse (Egeland, Jacobvitz, & Sroufe, 1988; Kaufman & Zigler, 1989), the development of depressive disorders in maltreated children (Kaufman, 1991), the persistence of antisocial behavior from adolescence to adulthood in youth involved with protective services (Widom, 1991), and the severity of posttraumatic stress reactions in response to a wide array of stressors (Pynoos et al., 1995). In addition, as discussed previously, the availability of positive supports also appears to mediate some neurobiological alterations associated with trauma (Kaufman, 1991; Kaufman, Birmaher, Perel, 1997).

Whereas strengthening caregivers' capacity to support children is essential in work with traumatized populations, it is important to consider the full range of mediating factors in planning interventions. Although several of these factors cannot be modified, many of them can. We discuss these issues further in the following section.

INTERVENTIONS

In accordance with the data reviewed in the two prior sections, recommended foci for interventions with traumatized children are broad and comprehensive (Kaufman & Mannarino, 1995; Larrieu & Zeanah, 1998; Pynoos et al., 1995, 1996). They include (1) clinical symptomatology, with recognition that traumatized children present with a diverse range of problems necessitating the use of a wide variety of interventions; (2) developmental deficits, as improvements in interpersonal relationships and indices of adaptive functioning can greatly affect a child's long-term developmental trajectory; (3) parental problems, including spousal violence, substance abuse, and psychiatric disturbances; (4) social factors, including provision of concrete resources; and (5) trauma-specific interventions, with recognition that many traumatized children have experienced multiple forms of adversity. Trauma-specific interventions can include restructuring of cognitive appraisals of the trauma, survey and restriction of exposure to trauma-related triggers, interventions for secondary adversities, support through court proceedings, grief work for losses associated with the trauma, and facilitation of permanency planning efforts.

In recent years, a number of innovative interventions have been developed for victims of child abuse (Cohen & Mannarino, 1996; Finkelhor & Berliner, 1995; Larrieu & Zeanah, 1998; Wolfe & Wekerle, 1993), domestic violence (Miller & Krull, 1997), community violence (Marans, 1996; Murphy, Pynoos, & James, 1997; Osofsky, 1997a,b), and victims of a wide range of traumas who meet criteria for PTSD (van der Kolk, McFarlane, & Weisaeth, 1996). In addition, practice guidelines have been developed for interventions with infants and toddlers (American Academy of Child and Adolescent Psychiatry, 1997). As there is significant variation in the clinical, developmental, family, and social characteristics of trauma victims, it is, however, unlikely that any one intervention will be appropriate for all victims. In addition, for the children most severely traumatized, it is unlikely that short or single inoculation interventions will make significant impact on child outcome.

Of the different foci of intervention delineated, facilitating permanency planning efforts is one of the most important—particularly for victims of intrafamilial abuse (see Larrieu & Zeanah, 1998, for an excellent description of a permanency planning focused intervention program for maltreated infants and toddlers). Permanency planning involves the systematic implementation of interventions to secure a caring, legally recognized, and continuous family for traumatized children (Child Welfare League of America, 1985). The aim of these efforts is to maximize the likelihood of children having at least one adult whom they identify as a psychological parent (Goldstein, Solnit, Goldstein, & Freud, 1996). Permanency efforts can result in family reunification, placement with kin, or child adoption. The role of the clinician in this process is to complete assessments of child adaptation and family functioning, to communicate families' strengths and weaknesses to protective service workers, to conduct therapeutic interventions to alleviate weaknesses by building on child and family strengths, to facilitate referrals for additional services as necessary, to report changes in risk and new incidents of abuse, to evaluate child attachments over time, and to make recommendations for treatment and permanency determinations in juvenile court.

Last year there were slightly over 500,000 children in foster care (Children's Defense Fund, 1998). Children less than 5 years of age comprised more than one-third of all children in out-of-home care (Administration for Children and Families, 1996). While the average length of stay in foster care is estimated at 2 years (Administration for Children and Families, 1996), the range of time in care varies widely for children. In some states, up to one-third of all children who enter out-of-home care spend the majority of their lives in "foster-care drift"—moving from one home to the next without ever obtaining a permanent home (Kaufman & Zigler, 1996). In addition, the road to permanency can be quite drawn out. For example, in some states it is estimated to take 3 to 4 years from placement to the filing of a termination of parental rights (TPR) petition, 1 to 2 years from the filing of the petition until the date of the court hearing to determine the TPR ruling, and an additional 2 to 5 years to process appeals (Cahn & Johnson, 1993).

The Adoption and Safe Families Act (Public Law 105-89), passed in November 1997, was designed to facilitate permanency planning efforts on behalf of maltreated children. Mandates for achieving permanency within 15 months necessitates close clinical monitoring

and careful case planning. The failure to allot significant resources within this legislation for services for traumatized children, birth parents, and foster parents, however, minimizes the likelihood that the permanency goals will be achieved.

Tragically, studies suggest that the majority of trauma victims receive no intervention. It has been estimated that less than half of all confirmed cases of child maltreatment receive any therapeutic or supportive services (McCurdy & Daro, 1992). Statistics for children who witness domestic and community violence are significantly worse. Consequently, consistent with the views of others (Dodson & Hardin, 1997; Hardin, 1992; Kaufman & Zigler, 1996), we believe systems changes are required to better meet the needs of traumatized children. Effective intervention, however, is within our reach.

CONCLUSION

The scope of the problem of childhood trauma is enormous. In this chapter, we discussed the effects of early trauma from multiple perspectives. The data reviewed highlight the particularly pernicious effects of trauma during the first few years of life. The results of preclinical and clinical studies suggest, however, that the negative effects of early trauma need not be irreversible. Unfortunately, far too few traumatized children are provided intervention services, and their traumas are frequently exacerbated by system failures. The cost of these system failures are great to the individual and to our society as a whole. Concerted, multidisciplinary efforts are required to minimize future traumatization of children and to alleviate its devastating effects when it does occur.

REFERENCES

Administration for Children and Families, Department of Health and Human Services (ACF). (1996). *Preliminary analysis of AFCARS data for children in foster care*. Washington, DC: U.S. Government Printing Office.

American Academy of Child and Adolescent Psychiatry (AACAP). (1997). Practice parameters for the psychiatric assessment of infants and toddlers (0–36 months). *Journal of the American Academy of Child and Adolescent Psychiatry, 36*(Suppl.), 21S–36S.

Adoption and Safe Families Act of 1997. Pub. L. No. 105–89. (1997).

Ainsworth, M. D., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Hillsdale, NJ: Erlbaum.

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.

Aron, L. Y., & Olson, K. K. (1997, Summer). Efforts by child welfare agencies to address domestic violence. *Public Welfare,* 4–13.

Beeghly, M., & Cicchetti, D. (1994). Child maltreatment, attachment and the self system: Emergence of an internal state lexicon in toddlers at high social risk. *Development Pychopathology, 6,* 5–30.

Briere, J., Berliner, L., Bulkley, J. A., Jenny, C., & Reid, T. (1996). *The APSAC handbook on child maltreatment.* Thousand Oaks, CA: Sage.

Cahn, K., & Johnson, P. (1993). *Children can't wait: Reducing delays in out-of-home care*. Washington, DC: Child Welfare League of America.

Carlson, V., Cicchetti, D., Barnett, D., & Braunwald, K. (1989). Disorganized/disoriented relationships in maltreated children. *Development Psychology, 25,* 525–531.

Carnegie Corporation of New York. (1994). *Starting points: Meeting the needs of our youngest children* (Report of the Carnegie Task Force on Meeting the Needs of Young Children). New York: Author.

Children's Defense Fund. (1998). *The state of America's children: Yearbook 1998.* Washington, DC: Author.

Child Welfare League of America (CWLA). (1985). *Director's report, permanency report.* Washington, DC: Author.

Cicchetti, D., & Barnett, D. (1991). Attachment organization in maltreated preschoolers. *Development and Psychopathology, 3,* 397–411.

Cicchetti, D., & Toth, S. (1995). A developmental psychopathology perspective on child abuse and neglect. *Journal of the American Academy of Child and Adolescent Psychiatry, 34,* 541–565

Cohen, J., & Mannarino, A. (1996). A treatment outcome study for sexually abused preschool children. Initial findings. *Journal of the American Academy of Child and Adolescent Psychiatry, 35,* 42–50.

Crittenden, P. M. (1981). Abusing, neglecting, problematic, and adequate dyads: Differentiating by patterns of interaction. *Merrill–Palmer Quarterly, 27,* 201–218.

Crittenden, P. M. (1992). Children's strategies for coping with adverse home environments: An interpretation using attachment theory. *Child Abuse and Neglect, 16,* 329–343.

DeBellis, M. D., Baum, A., Birmaher, B., Keshavan, M., Eccard, C., Boring, A., Jenkins, F., & Ryan, N. (1999b). Developmental Traumatology, Part I: Biological Stress Systems. *Biological Psyciatry, 45,* 1259–1270.

DeBellis, M. D., Chrousos, G. P., Dorn, L. D., Burke, L., Helmers, K., Kling, M. A., Trickett, P. K., & Putnam, F. W. (1994). Hypothalamic–pituitary–adrenal axis dysregulation in sexually abused girls. *Journal of Clinical Endocrinology and Metabolism, 78,* 249–255.

DeBellis, M. D., Keshavan, M., Clark, D., Casey, B. J., Giedd, J., Boring, A., Frustaci, K., & Ryan, N.

(1999a). Developmental Traumatology, Part II: Brain Development. *Biological Psyciatry, 45,* 1271–1284.

Dodson, G. D., & Hardin, M. (1997). *On-time services to preserve families.* Washington, DC: American Bar Association.

Egeland, B., Jacobvitz, D., & Sroufe, L. A. (1988). Breaking the cycle of abuse. *Child Development, 59,* 1080–1088.

Egeland, B., & Sroufe, L. A. (1981). Developmental sequelae of maltreatment in infancy. *New Directions in Child Development, 11,* 77–92.

Erickson, M. F., & Egeland, B. (1996). Child neglect. In J. Briere, L. Berliner, J. Bulkey, C. Jenny, & T. Reid (Eds.), *The American Professional Society on the Abuse of Children (APSAC) handbook on child maltreatment* (pp. 4–20). Thousand Oaks, CA: Sage.

Farber, E. A., & Egeland, B. (1987). Invulnerability among abused and neglected children. In E. J. Anthony & B. J. Cohler (Eds.), *The invulnerable child* (pp. 253–288). New York: Guilford Press.

Fantuzza, J., Boruch, R., Beriama, A., Atkins, M., & Marcus, S. (1997). Domestic violence and children: Prevalence and risk in five major U. S. cities. *Journal of the American Academy of Child and Adolescent Psychiatry, 36,* 116–122.

Finkelhor, D., & Berliner, L. (1995). Research on the treatment of sexually abused children: A review and recommendations. *Journal of the American Academy of Child and Adolescent Psychiatry, 34,* 1408–1423.

Fraiberg, S. (1982). Pathological defenses in infancy. *Psychoanalytic Quarterly, 51,* 612–635.

Friedrich, W. (1993). Sexual victimization and sexual behavior in children: A review of recent literature. *Child Abuse and Neglect, 17,* 59–66.

Gaensbauer, T. (1982). Regulation of emotional expression in infants from two contrasting caretaking environments. *Journal of the American Academy of Child Psychiatry, 21,* 163–171.

Galvin, M. R., Stilwell, B. M., Shekhar, A., Kopta, S. M., & Goldfarb, S. M. (1997). Maltreatment, conscience functioning and dopamine beta hydroxylase in emotionally disturbed boys. *Child Abuse and Neglect, 21,* 83–92.

George, C., & Main, M. (1979). Social interaction of young abused children: Approach, avoidance, and aggression. *Child Development, 50,* 306–318.

Gersten, M., Coster, W., Schneider-Rosen, K., Carlson, V., & Cicchetti, D. (1986). The socio-emotional bases of communicative functioning: Quality of attachment, language development, and early maltreatment. In M. E. Lamb, A. L. Brown, & B. Rogoff (Eds.), *Advances in developmental psychology* (Vol. 14, pp. 105–151). Hillsdale, NJ: Erlbaum.

Goenjian, A., Yehuda, R., Pynoos, R. S., Steinberg, A. M., Tashjian, M., Yang, R. K., Najarian, L. M., & Fairbanks, L. (1996). Basal cortisol, dexamethasone suppression of cortisol and MHPG among adolescents after the 1988 earthquake in Armenia. *American Journal of Psychiatry, 154,* 536–542.

Goldstein, J., Solnit, A., Goldstein, S., & Freud, A. (1996). *The best interests of the child: The least detrimental alternative.* New York: Free Press.

Goodman, G., Taub, E., Jones, D., England, P., Port, L., Rud, L., & Pradp, L. (1992). Testifying in the criminal court: Emotional effects on child sexual assault victims. With Commentaries by J. Myers, GB Melton. *Monographs of the Society for Research in Child Development, 57*(Serial No. 5), 1–142.

Green, A. (1981). Core affective disturbances in abused children. *Journal of the American Academy of Psychoanalysis, 9,* 435–446.

Green, A. (1993). Child sexual abuse: Immediate and long-term effects and intervention. *Journal of the American Academy of Child and Adolescent Psychiatry, 32,* 890–902.

Greenhill, L. (1992). Pharmacologic treatment of attention deficit hyperactivity disorder. *Psychiatric Clinics of North America, 15,* 1–27.

Gunnar, M. (1998, March). *Bioprocesses in human development.* Presentation at the Canadian Institute for Advanced Research, Vancouver.

Hardin, M. (1992). *Establishing a core of services for families subject to state intervention.* Washington, DC: American Bar Association.

Herbison, A. E. (1997). Nonadrenergic regulation of cyclic GnRH secretion. *Reviews of Reproduction, 2,* 1–6.

Hughes, H., Parkison, D., & Bargo, M. (1989). Witnessing spouse abuse and experiencing physical abuse: A double whammy? *Journal of Family Violence, 4,* 197–209.

Kaufman, J. (1991). Depressive disorders in maltreated children. *Journal of the American Academy of Child and Adolescent Psychiatry, 30,* 257–265.

Kaufman J. (1996). Child abuse. *Current Opinion in Psychiatry, 9,* 251–256.

Kaufman, J., Birmaher, B., Brent, D., Dahl, R., Bridges, J., & Ryan, N. (1998). Psychopathology in the relatives of depressed-abused children. *Child Abuse and Neglect, 22,* 204–213.

Kaufman, J., Birmaher, B. Clayton, S., & Retano, A. (1997). Case study: Trauma related hallucinations in children. *Journal of the American Academy of Child and Adolescent Psychiatry, 36,* 1602–1605.

Kaufman, J., Birmaher, B., Perel, J., Dahl, R., Moreci, P., Nelson, B., Wells, W., & Ryan, N. (1997). The corticotropin releasing hormone challenge in depressed abused, depressed non-abused and normal control children. *Biological Psychiatry, 42,* 669–679.

Kaufman, J., Birmaher, B., Perel, J., Dahl, R., Stull, S., Brent, D., Trubnick, L., & Ryan, N. (1998). Serotonergic functioning in depressed abused children: Clinical and familial correlates. *Biological Psyciatry, 44,* 973–981.

Kaufman, J., Brent, D., Birmaher, B., Dahl, R., Perel, J., Ryan, N., Puig-Antich, J., & Williamson, D. (1993). *Measures of family adversity, clinical symptomatology, and cortisol secretion in a sample of preadolescent depressed children.* Paper presented at the annual meeting of the Society for Research in Child and Adolescent Psychopathology (SRCAP), Santa Fe, NM.

Kaufman, J., Cooke, A., Arny, L., Jones, B., & Pittinsky, T. (1994). Problems defining resiliency: Illustrations from the study of maltreated children [Special issue]. *Development and Psychopathology, 6,* 215–229.

Kaufman, J., & Mannarino, A. (1995). Evaluation of child maltreatment. In R. T. Ammerman & M. Hersen

(Eds.), *Handbook of child behavior therapy in the psychiatric setting* (pp. 73–92). New York: Wiley.

Kaufman, J., & Zigler, E. (1989). The intergenerational transmission of child abuse. In D. Cicchetti & V. Carlson (Eds.), *Child maltreatment: Theory and research on the causes and consequences of child abuse and neglect* (pp. 129–150). Cambridge, UK: Cambridge University Press.

Kaufman, J., & Zigler, E. (1996). Child abuse and social policy. In E. Zigler, S. L. Kagan, & N. Hall (Eds.), *Children, families, and government: Preparing for the twenty-first century* (pp. 233–255). Cambridge, UK: Cambridge University Press.

Kendall-Tackett, K. A., Williams, L. M., & Finkelhor, D. (1993). Impact of sexual abuse on children: A review and synthesis of recent empirical studies. *Psychology Bulletin, 113,* 164–180.

Larrieu, J., & Zeanah, C. (1998). Intensive intervention for maltreated infants and toddlers in foster care. *Child and Adolescent Psychiatric Clinics of North America, 7,* 33357–33371.

Levavi-Sivan, B., Ofir, M., & Yaron, Z. (1995). Possible sites of dopaminergic inhibition of gonadotropin release from the pituitary. *Molecular and Cellular Endocrinology, 109*(1), 87–95.

Main, M., & George, C. (1985). Responses of abused and disadvantaged toddlers to distress in agemates: A study in the day care setting. *Developmental Psychology, 21,* 407–412.

Main, M., & Solomon, J. (1990). Procedures for identifying infants as disorganized/disoriented during the Ainsworth Strange Situation. In M. Greenberg, D. Cicchetti, & E. M. Cummings (Eds.), *Attachment during the preschool years.* Chicago: University of Chicago Press.

Marans, S. (1996). Psychoanalysis on the beat. Children, police, and urban trauma. *Psychoanalytic Study of the Child, 51,* 522–541.

Martinez, P., & Richters, J. E. (1993). The NIMH community violence project: II. Children's distress symptoms associated with violence exposure. *Psychiatry, 56,* 22–35.

McClellan, J., McCurry, C., Ronnei, M., Adams, J., Eisner, A., & Storck, M. (1996). Age of onset of sexual abuse: Relationship to sexually inappropriate behaviors. *Journal of the American Academy of Child and Adolescent Psychiatry, 35,* 1375–1386.

McCurdy, K., & Daro, D. (1992). *Current trends in child abuse reporting and fatalities: The results of the 1992 annual fifth state survey Z.* Report of the National Center on Child Abuse Prevention Research. Chicago.

Miller, J., & Krull, A. (1997). Controlling Domestic Violence: Victim Resources and Police Intervention. In G. Kaufman Kantor & J. Jasinski (Eds.), *Out of the darkness: contemporary perspectives on family violence* (pp. 235–254). Thousand Oaks, CA: Sage Publications.

Murphy, L., Pynoos, R. S., & James, C. B. (1997). The trauma/grief-focused group psychotherapy module of an elementary school-based violence prevention/intervention program. In J. D. Osofsky (Ed.), *Children in a violent society* (pp. 223–255). New York: Guilford Press.

Neely, E. K., Hintz, R. L., Wilson, D. M., Lee, P. A., Gautier, T., Argente, J., & Stene, M. (1995). Normal ranges for immunochemiluminometric gonadotropin assays. *Journal of Pediatrics, 127,* 40–46.

Ogawa, J. R., Sroufe, L. A., Weinfeld, N. S., Carlson, E. A., & Egeland, B. (1997). Development and the fragmented self: Longitudinal study of dissociative symptomatology in a nonclinical sample. *Development and Psychopathology, 9,* 855–879.

Okun, A., Parker, J., & Levendosky, A. (1994). Distinct and interactive contributions of physical abuse, socioeconomic disadvantage and negative life events to children's social, cognitive and affective adjustment. *Developmental Psychopathology, 6,* 77–98.

Osofsky, J. D. (1997a). Prevention and policy: Directions for the future. In J. D. Osofsky (Ed.), *Children in a violent society* (pp. 323–328). New York: Guilford Press.

Osofsky, J. D. (1997b). The Violence Intervention Project for children and families. In J. Osofsky (Ed.), *Children in a violent society* (pp. 256–260). New York: Guilford Press.

Perry, B. D., Pollard, P., Blakey, T., Baker, W., & Vigilante, D. (1995). Childhood trauma, the neurobiology of adaption, and "use-dependent" development of the brain: How "states" become "traits." *Infant Mental Health Journal, 16,* 271–291.

Perry, B., Vigilante, D., Blakey, T., Baker, B., Withers, A., & Sturges, C. (1995, October). *Continuous heart rate monitoring in maltreated children.* Presented at the American Academy of Child and Adolescent Psychiatry, New Orleans.

Pine, D., Coplan, J., Wasserman, G., Miller, L., Fried, J., Davies, M., Cooper, T., Greenhill, L., Shaffer, D., & Parsons, B. (1997). Neuroendocrine response to fenfluramine challenge in boys. *Archives of General Psychiatry, 54,* 839–846.

Pynoos, R. S., Steinberg, A. M., & Goenjian, A. (1996). Traumatic stress in childhood and adolescence: Recent developments and current controversies. In B. A. van der Kolk, A. C. McFarlane, & L. Weisaeth (Eds.), *Traumatic stress: The effects of overwhelming experience on mind, body, and society* (pp. 331–358). New York: Guilford Press.

Pynoos, R., Steinberg, A., & Wraith, R. (1995). A developmental model of childhood traumatic stress. In D. Cicchetti & D. Cohen (Eds.), *Developmental psychopathology. Volume 2: Risk, disorder, and adaptation* (pp. 57–80). New York: Wiley.

Renken, B., Egeland, B., Marvinney, D., Mangelsdorf, S., & Sroufe, L. A. (1989). Early childhood antecedents of aggression and passive-withdrawal in early elementary school. *Journal of Personality, 57,* 257–281.

Richters J., & Martinez, P. (1993). The NIMH Community Violence Project: Children as victims of and witnesses to violence. *Psychiatry, 56,* 7–21.

Richters, M. M., & Volkmar, F. R. (1994). Reactive attachment disorder of infancy or early childhood. *Journal of the American Academy of Child and Adolescent Psychiatry, 33,* 328–332.

Rivest, S., & Rivier, C. (1995). The role of corticotropin-releasing factor and interleukin-1 in the regulation of neurons controlling reproductive functions. *Endocrine Reviews, 16,* 177–199.

Rogeness, G. A. (1991). Psychosocial factors and amine systems. *Psychiatric Research, 37,* 215–217.

Rosenblum, L., Coplan, J., Friedman, S., Bassoff, T., Gorman, J., & Andrews, M. (1994). Adverse early experiences affect noradrenergic and serotonergic functioning in adult primates. *Biological Psychiatry, 35,* 221–227.

Rosler, A., & Witztum, E. (1998). Treatment of men with paraphilia with a long-acting analogue of gonadotropin-releasing hormone. *New England Journal of Medicine, 338,* 416–422.

Scheeringa, M. S., Zeanah, C. H., Drell, M. J., & Larrieu, J. A. (1995). Two approaches to the diagnosis of posttraumatic stress disorder in infancy and early childhood. *Journal of the American Academy of Child and Adolescent Psychiatry, 34,* 191–200.

Schneider-Rosen, K., Braunwald, K., Carlson, V., & Cicchetti, D. (1985). Current perspectives in attachment theory: Illustration from the study of maltreated infants. *Monographs of the Society for Research in Child Development, 50*(Serial No. 1–2). 194–210.

Schneider-Rosen, K., & Cicchetti, D. (1984). The relationship between affect and cognition in maltreated infants: Quality of attachment and the development of visual self-recognition. *Child Development, 55,* 648–658.

Schneider-Rosen, K., & Cicchetti, D. (1991). Early self-knowledge and emotional development: Visual self-recognition and affective reactions to mirror self-images in maltreated and non-maltreated toddlers. *Developmental Psychology, 27,* 471–478.

Straus, M., & Gelles, R. (1990). How violent are American families: Estimates from the National Family Violence Resurvey and other studies. In M. A. Straus & R. J. Gelles (Eds.), *Physical violence in American Families: Risk factors and adaptations to violence in 8,145 families* (pp. 95–112). New Brunswick, NJ: Transaction.

Taylor, I., Zuckerman, B., Harik, V., & Groves, B. (1994). Witnessing violence by young children and their mothers. *Journal of Developmental Pediatrics, 15,* 120–123.

U.S. Department of Health and Human Services, National Center on Child Abuse and Neglect. (1997). *Child maltreatment 1995: Reports from the states to the national center on child abuse and neglect data system.* Washington, DC: U. S. Government Printing Office.

van der Kolk, B. A., McFarlane, A. C., & Weisaeth, L. (Eds.). (1996). *Traumatic stress: The effects of overwhelming experience on mind, body, and society.* New York: Guilford Press.

Warren, S. L., Huston, L., Egeland, B., & Sroufe, L. A. (1997). Child and adolescent anxiety disorders and early attachment. *Journal of the American Academy of Child and Adolescent Psychiatry, 36,* 637–644.

Widom, C. S. (1991). The role of placement experiences in mediating the criminal consequences of early childhood victimization. *American Journal of Orthopsychiatry, 61,* 195–209.

Wolfe, D., & Wekerle, C. (1993). Treatment strategies for child physical abuse and neglect: A critical progress report. *Clinical Psychology Review, 13,* 473–500.

Zeanah, C. H., Boris, N. W., Bakshi, S., & Lieberman, A. F. (in press). Disorders of attachment. In J. Osofsky & H. Fitzgerald (Eds.), *WAIMH handbook of infant mental health.* New York: Wiley.

Zeanah, C. H., Jr., Mammen, O. K., & Lieberman, A. F. (1993). Disorders of attachment. In C. H. Zeanah, Jr. (Ed.), *Handbook of infant mental health* (pp. 332–349). New York: Guilford Press.

Zeanah, C. H., & Scheeringa, M. S. (1997). The experience and effects of violence in infancy. In J. D. Osofsky (Ed.), *Children in a violent society* (pp. 97–123). New York: Guilford Press.